

On 6 September 2002, the applicant appealed to the Board of Appeals from the decision of the Examiner finally rejecting Claims 1-10. The Examiner has reopened examination of the application, but appears to be using the same art to make the same rejections that were appealed.

Claim 1 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,486,878 to Negishi et al. ("Negishi") in view of U.S. Patent No. 6,049,364 to Takahara et al. ("Takahara"). The applicant respectfully disagrees and submits the Examiner has failed to present a prima facie case of obviousness under 35 U.S.C. § 103.

"A person shall be entitled to a patent unless," creates an initial presumption of patentability in favor of the applicant. 35 U.S.C. § 102. "We think the precise language of 35 U.S.C. § 102 that, 'a person shall be entitled to a patent unless,' concerning novelty and unobviousness, clearly places a burden of proof on the Patent Office which requires it to produce the factual basis for its rejection of an application under sections 102 and 103, see *Graham and Adams*." *In re Warner*, 379 F.2d 1011, 1016 (C.C.P.A. 1967) (referencing *Graham v. John Deere Co.*, 383 U.S. 1 (1966) and *United States v. Adams*, 383 U.S. 39 (1966)). "As adapted to *ex parte* procedure, *Graham* is interpreted as continuing to place the 'burden of proof on the Patent Office which requires it to produce the factual basis for its rejection of an application under sections 102 and 103'." *In re Piasecki*, 745 F.2d 1468 (Fed. Cir. 1984) (citing *In re Warner*, 379 F.2d at 1016).

"The prima facie case is a procedural tool which, as used in patent examination (as by courts in general), means not only that the evidence of the prior art would reasonably allow the conclusion the examiner seeks, but also that the prior art compels such a conclusion if the applicant produces no evidence or argument to rebut it." *In re Spada*, 911 F.2d 705, 708 n.3 (Fed. Cir. 1990).

"To support the conclusion that the claimed combination is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed combination or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." *Ex parte Clapp*, 227 U.S.P.Q. 972, 973 (Bd. Pat. App. & Inter. 1985).

“To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). ‘All words in a claim must be considered in judging the patentability of that claim against the prior art.’ In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).” MPEP § 2143.03.

The Examiner has not pointed to any teaching in Negishi in view of Takahara that suggests a “color modulator comprised of a stack of at least two dielectric layers and at least three transparent electrodes, wherein a voltage applied to said electrodes limits the wavelengths of light permitted to continue on said light path” as recited by Claim 1. Specifically, Negishi in view of Takahara, teaches neither a “color modulator comprised of . . . at least three transparent electrodes” nor a “color modulator . . . wherein a voltage applied to said electrodes limits the wavelengths of light permitted to continue on said light path” as recited by Claim 1.

With respect to the limitation a “color modulator . . . wherein a voltage applied to said electrodes limits the wavelengths of light permitted to continue on said light path” recited by Claim 1, the Examiner has stated, “Negishi teaches a dielectric mirror, and the application of a voltage between a light modulation layers through two transparent electrodes (Et1, Et2) which would produce a change that is expressed in wavelength. See column 30, lines 37-67, and Fig 36.”

The applicant respectfully submits the passage cited by the Examiner does not show, teach, or suggest a “color modulator . . . wherein a voltage applied to said electrodes limits the wavelengths of light permitted to continue on said light path” as recited by Claim 1. Nor does the passage cited by the Examiner describe “a change that is expressed in wavelength” as stated by the Examiner. The passage cited by the Examiner describes a color selecting reflecting element that, “when the switch SW is turned on, the S-polarized light of red wave length band and the P-polarized light of blue wave length bend [sic] can be emitted. Further, when the switch SW is turned off, the S-polarized light of blue wave length band and the P-polarized light of red wave length band can be emitted.”

The Examiner has not pointed to any teaching in the prior art suggesting the modification

or combination of Negishi and Takahara proposed by the Examiner. Instead, the Examiner merely states, "One would have been motivated in view of the suggestion in Takahara that that the light modulating means (243) and optical path projection mean (255) can be equivalently applied to meet the desired 'projection optics on the light path operable to focus light from spatial light modulator on an image plane.'" Such a conclusory statement fails to show an express or implied suggestion in the art, and does not provide any line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references as required by Ex Parte Clapp.

For the reasons given above, the Examiner has not met the burden of presenting a prima facie case of obviousness and the rejection of Claim 1 under 35 U.S.C. § 103(a) is defective and should be withdrawn.

Claims 2-6 depend from Claim 1 and should be deemed allowable for that reason and on their own merits. For the reasons mentioned above with respect to Claim 1, the Negishi in view of Takahara does not show, teach, or suggest the recited limitations of Claim 1, much less the recited limitations of Claim 1 in combination with the additional limitations of Claims 2-6. The applicant respectfully submits the Examiner has failed to present a prima facie case of obviousness under 35 U.S.C. § 103.

With respect to Claim 2, the Examiner has failed to present a prima facie case of obviousness under 35 U.S.C. § 103. Claim 2 recites "a prism assembly for spatially separating an illumination segment of said light path from a projection segment of said light path, said spatial light modulator located at a junction between said illumination segment and said projection segment." The Examiner has merely stated "Negishi teaches a dichroic prism (DF) which is used to synthesize two light beams. See Fig 47." The applicant respectfully submits that this utterly fails to address the limitations of Claim 2. Therefore the rejection under 35 U.S.C. § 103 is defective and should be withdrawn.

With respect to Claim 3, the Examiner has failed to present a prima facie case of obviousness under 35 U.S.C. § 103. Claim 3 recites "said color modulator is fabricated on a face of said prism assembly." The Examiner has merely stated "Negishi teaches a dichroic prism

(DF) which is used to synthesize two light beams. See Fig 47.” The applicant respectfully submits that this utterly fails to address the limitations of Claim 3. Therefore the rejection under 35 U.S.C. § 103 is defective and should be withdrawn.

With respect to Claim 5, the Examiner has failed to present a prima facie case of obviousness under 35 U.S.C. § 103. Claim 5 recites “said spatial light modulator is a deformable mirror device.” The Examiner has merely stated “Negishi teach a spatial light modulator element, SLM with respect to a nature of dialectic mirror.” The applicant respectfully submits that the Examiner has not pointed to any passage in either Negishi or Takahara that suggests a deformable mirror device as recited by Claim 5. Therefore the rejection under 35 U.S.C. § 103 is defective and should be withdrawn.

For the reasons given above, the Examiner has not met the burden of presenting a prima facie case of obviousness and the rejection of Claims 2-6 under 35 U.S.C. § 103(a) is defective and should be withdrawn.

Claims 7 and 10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Negishi in view of Takahara. The applicant respectfully disagrees and submits the Examiner has failed to present a prima facie case of obviousness under 35 U.S.C. § 103.

With respect to Claim 7, the Examiner has not pointed to any teaching in Negishi in view of Takahara that suggests “voltages applied to said electrodes are operable to filter an incident white light beam into a light beam of one of three primary colors” as recited by Claim 7.

With respect to Claim 10, the Examiner has not pointed to any teaching in Negishi in view of Takahara that suggests “filtering said beam of white light to produce a primary color beam of light, said filtering step performed by passing said beam of white light through a stack of at least two dielectric layers, at least one of said dielectric layers exposed to an electric field, . . . and altering electrical signals biasing said stack of dielectric layers such that said primary color beam of light alternates between three primary colors” as recited by Claim 10.

The Examiner stated, “Furthermore, Negishi teaches about a signal processing circuit (2) outputting a control signal which in turn is related to a drive circuit that is responsible for color

switching and selecting operations. See column 30, lines 14-23 and Fig. 36.” The applicant respectfully submits the Examiner has not addressed the limitations of Claims 7 or 10. The passage cited by the Examiner does not show, teach, or suggest “alternating layers of electrodes and dielectric materials, wherein voltages applied to said electrodes are operable to filter an incident white light beam into a light beam of one of three primary colors” as recited by Claim 7, or “passing said beam of white light through a stack of at least two dielectric layers, at least one of said dielectric layers exposed to an electric field, . . . and altering electrical signals biasing said stack of dielectric layers such that said primary color beam of light alternates between three primary colors” as recited by Claim 10. To the contrary, the passage cited by the Examiner teaches, as summarized by Negishi in column 31, lines 26-30, “when the switch SW is turned on, the S-polarized light of red wave length band and the P-polarized light of blue wave length bend [sic] can be emitted. Further, when the switch SW is turned off, the S-polarized light of blue wave length band and the P-polarized light of red wave length band can be emitted.” Thus, the voltage applied to the electrodes merely selects a polarization, not a wavelength.

The Examiner stated, “Negishi teaches a mixture of light to a substrate (BP2) side of the [spatial] light modulation element SLM.beta through the color resolving filter Fdf. See column 44, lines 20-30 and Fig. 23-26.” The applicant respectfully submits the passage cited by the Examiner does not address the limitations of Claims 7 and 10 as recited above. The color resolving filters referred to are static dichroic filters that do not select wavelengths of light based on a voltage applied to the electrodes—as stated by the Examiner, “the primary colors emitted from three regions (red, green, blue) are focused on three special light modulation. See Fig 2.”

For the reasons given above, the Examiner has not met the burden of presenting a prima facie case of obviousness and the rejection of Claims 7 and 10 under 35 U.S.C. § 103(a) is defective and should be withdrawn.

Claims 8 and 9 depend from Claim 7 and should be deemed allowable for that reason and on their own merits. For the reasons argued above with respect to Claim 7, the Negishi in view of Takahara fails to show, teach, or suggest the limitations of Claim 7, much less the limitations of Claim 7 in combination with the additional limitations of Claims 8 and 9.

Claims 11-13 have been added by amendment and are deemed allowable for the reasons expressed with regard to Claims 7-9 above.

In view of the remarks presented herewith, it is believed that the claims currently in the application, Claims 1-13, accord with the requirements of 35 U.S.C. § 112 and are allowable over the prior art of record. Therefore, it is urged that Claims 1-13 are in condition for allowance. Reconsideration of the present application is respectfully requested.

Respectfully submitted,



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Version With Markings To Show Changes Made

In the claims:

Claims 11-13 have been amended as follows:

11. A color modulator comprising:
 - a substrate;
 - alternating layers of electrodes and dielectric materials, wherein voltages applied to said electrodes are operable to filter an incident white light beam into a light beam sequentially comprised of each of three primary colors.
12. The color modulator of Claim 11, wherein said dielectric material are selected from the group consisting of, LiNbO_3 , LiTaO_3 , $\text{NH}_4\text{H}_2\text{PO}_4$, KH_2PO_4 , and CdTe .
13. The color modulator of Claim 11, said electrodes formed of Indium Tin Oxide.